

**ABSTRACT**

A new type of dielectric resonator loaded metal cavity filters that are compact and resonate only the desired frequency, along with a method of making such filters. The more compact dielectric resonator loaded metal cavity filter is made by a method of stacking resonator loaded cavities into a filter. A method of making a dielectric resonator filter or duplexer filter which inhibits the undesired higher order harmonics from passing through the filter. Whereby, the method for inhibiting higher order harmonics includes differentiating sizes of the dielectric resonator and metal cavity as compare to other cavities in the filter to prevent the passage of undesired higher order harmonics through the filter.